

Flight Scientist Report
Saturday 06/05/2022 ACTIVATE RF165

Flight Type: Statistical Survey Flight

Flight Route: TXKF-BALOO-3618N/05949W-BALOO-TXKF

Special Notes: A tropical storm was approaching Bermuda on this day and this flight was done early to avoid the bad conditions, which will become intensified later on this day and the following day.

King Air

Pilot report (Wusk):

First research flight out of Bermuda for UC12 (after aborted flight on Jun 2 due to flap motor failure). Single flight day. HSRL struggled some on start up and initially airborne mostly due to issues associated with the removal and reinstall. Issues overcome, the flight was flown as planned. Crew was Sandeen, Wusk, Harper.

Flight scientist report (Harper):

UC12 takeoff: 11:02utc

Cloud conditions: cloud layers at ~14 and 19kft on way about. Cirrus conditions not recorded as I was busy diagnosing HSRL seed laser issues

Aircraft coordination: within two minutes from beginning to 13:38utc. Slowly falling further behind HU25 from 13:38 until landing

Sonde 1: at Waypoint BALOO.

Sonde 2: at turnaround waypoint

Sonde 3: at halfway between turnaround and BALOO waypoints

Sonde 4: at halfway point between BALOO and BERMuda

Sonde 5: NOT launched: in original plan but science team changed the plan

Instrument issues:

RSP no issues

AVAPS no issues

Cameras: Power supply was unplugged but this was not noticed until approx 30min into flight due to distraction of HSRL seed issues

HSRL: Seed Laser locking issues due to optical feedback issue. Intermittent operation on the outbound leg. Issue resolved shortly after turnaround waypoint. No issues afterwards.

UC12 landing: 14:28utc

Falcon

Pilot report (Baxley):

ACTIVATE mission flown with HU-25 and UC-12. TXKF-BALOO-3618N/05949W-BALOO-TXKF.

Mission flown as planned, weather as expected.

Flight scientist report ():

Winstead:

DAQ computer prior to taxi had to be restarted to reestablish connection with PSAP. Prior to taxi wet neph internal RH>100%

11:13:30 Wet neph RH <100%

11:16:20 Wet neph >100%. Humidifier control switched to remote to eliminate any humidification

11:37:00 Wet neph RH<100%. Humidifier switched to Omega to start humidifying again.

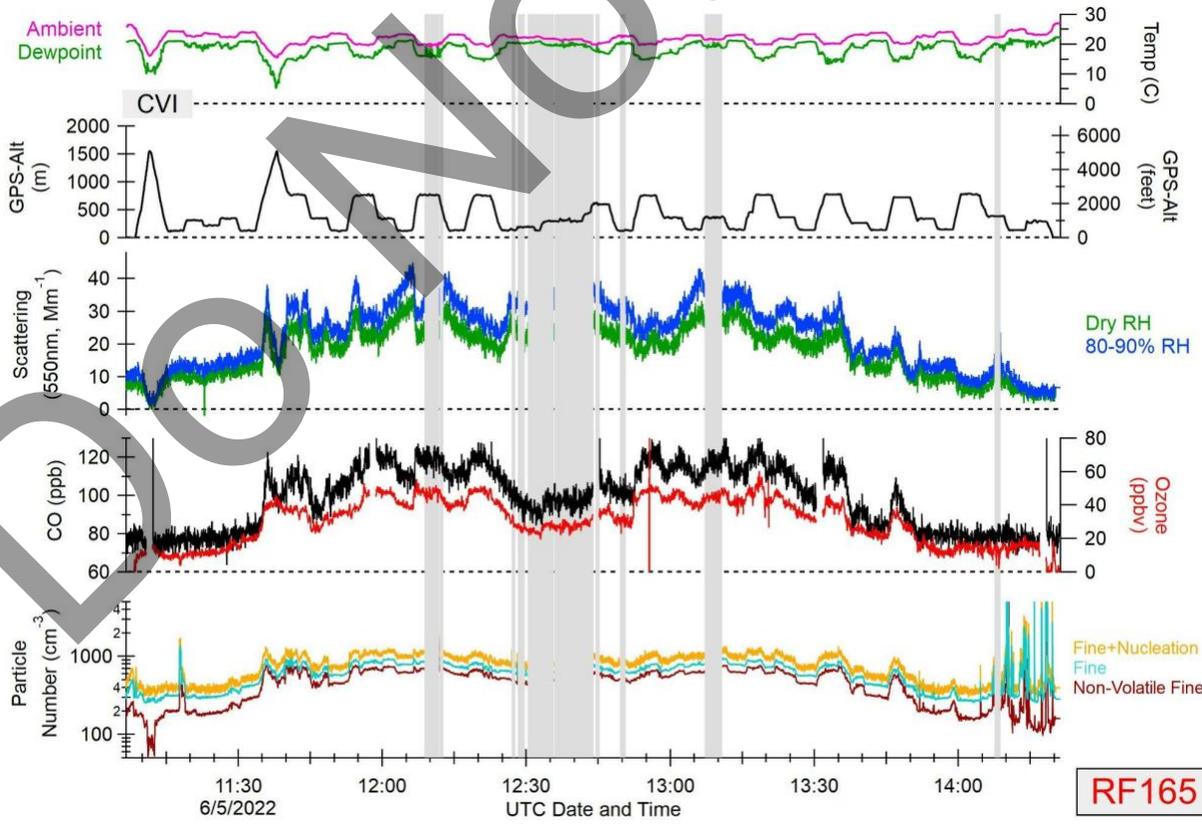
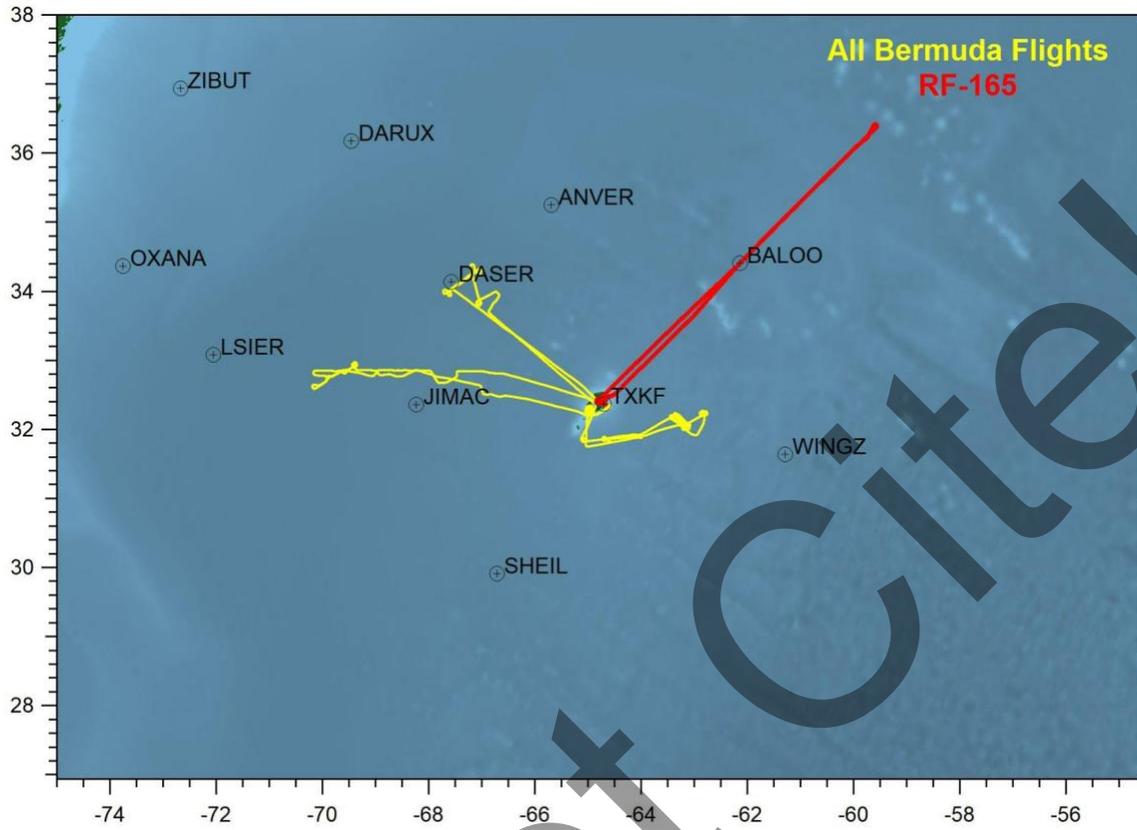
Humidifying set very low.

12:57 Cabin temp = 102.5

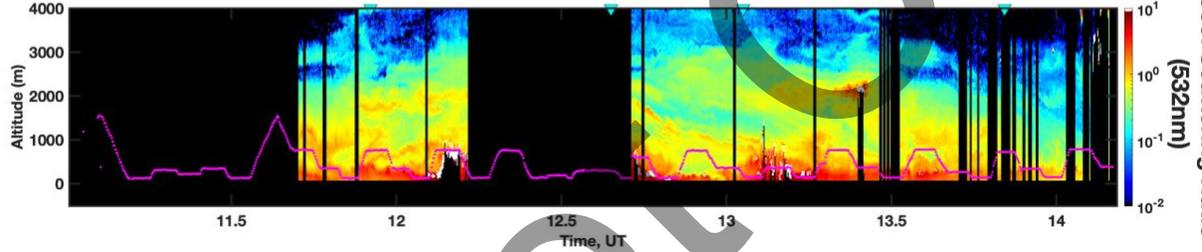
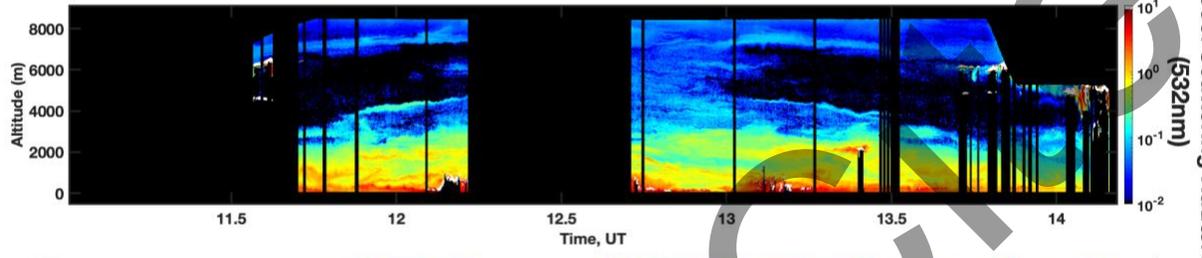
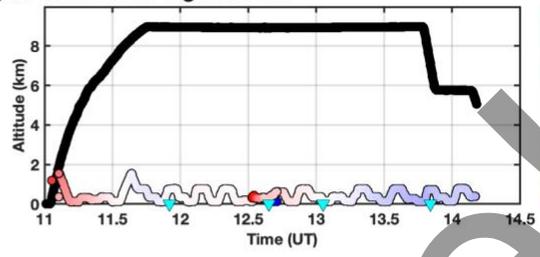
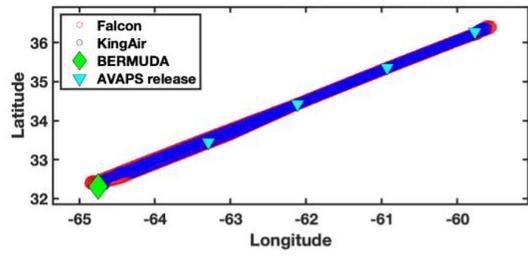
13:20 SMPS software locked up. Had trouble restarting it, but finally got it back working

14:12:15 WCM and humidifier turned off in preparation for landing

Cabin temperature reached max temp of 105.5 during flight



20220605 - ACTIVATE - KingAir and Falcon flight tracks



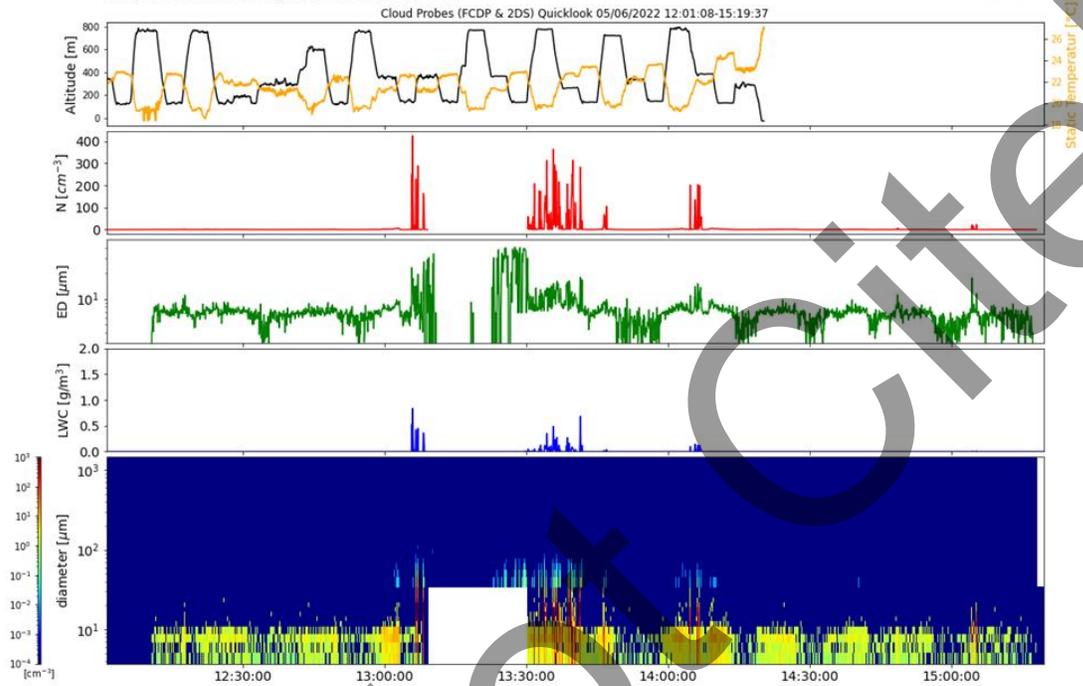
Aerosol scattering ratio (532nm)

DO NOT

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

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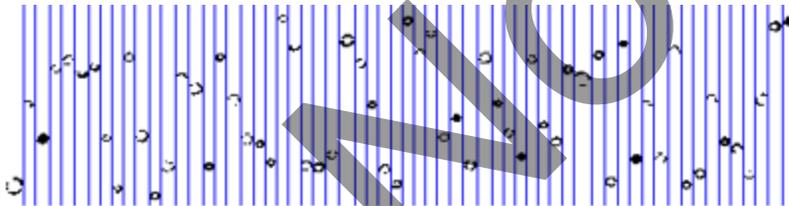
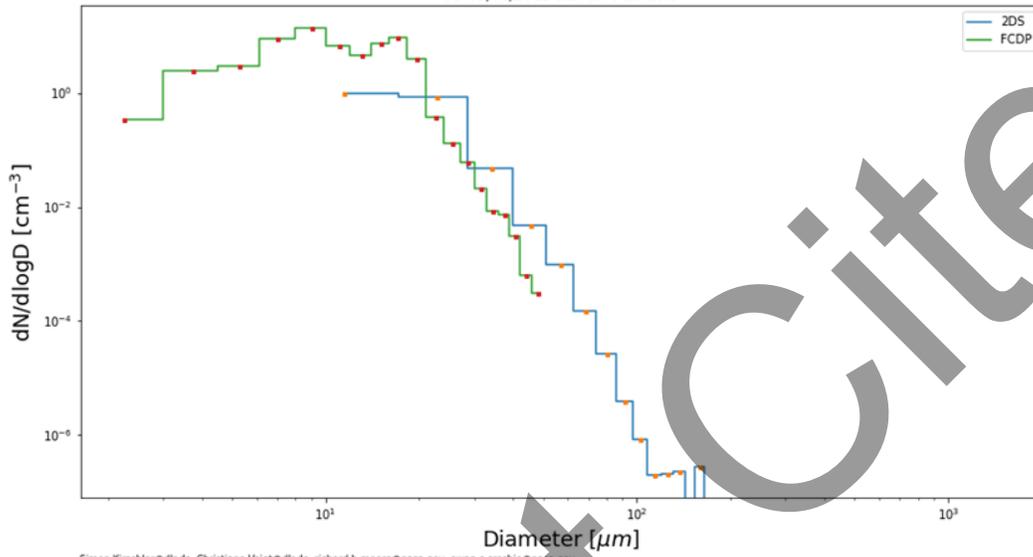
Do Not Cite!

PSD ACTIVATE

preliminary data, only for quicklook use
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



PSD 05/06/2022 12:01:08-15:19:37

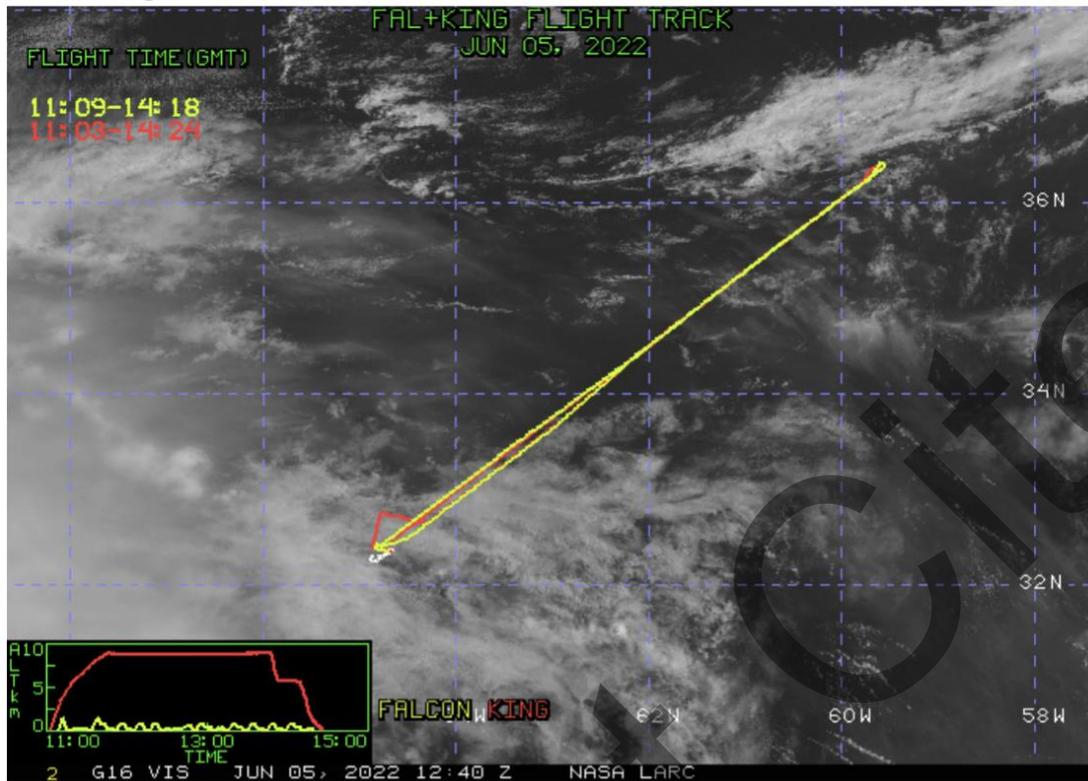


Only pure liquid clouds without Precip.

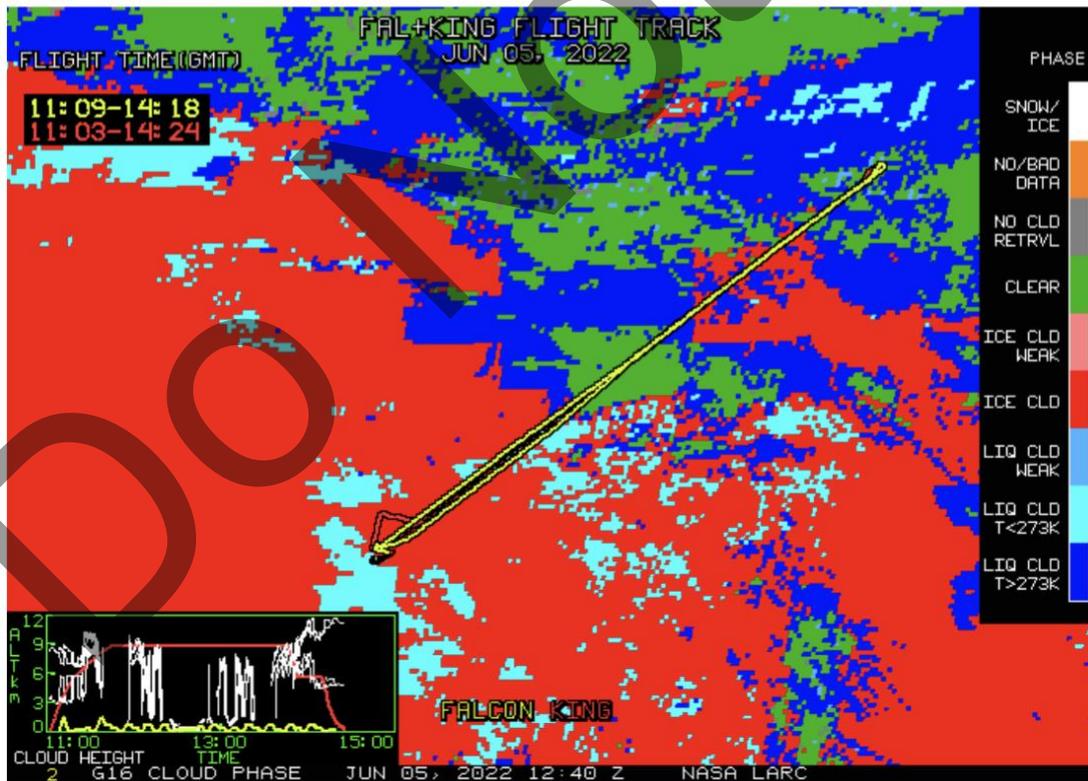
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 165, 12:40 UTC Jun 05, 2022

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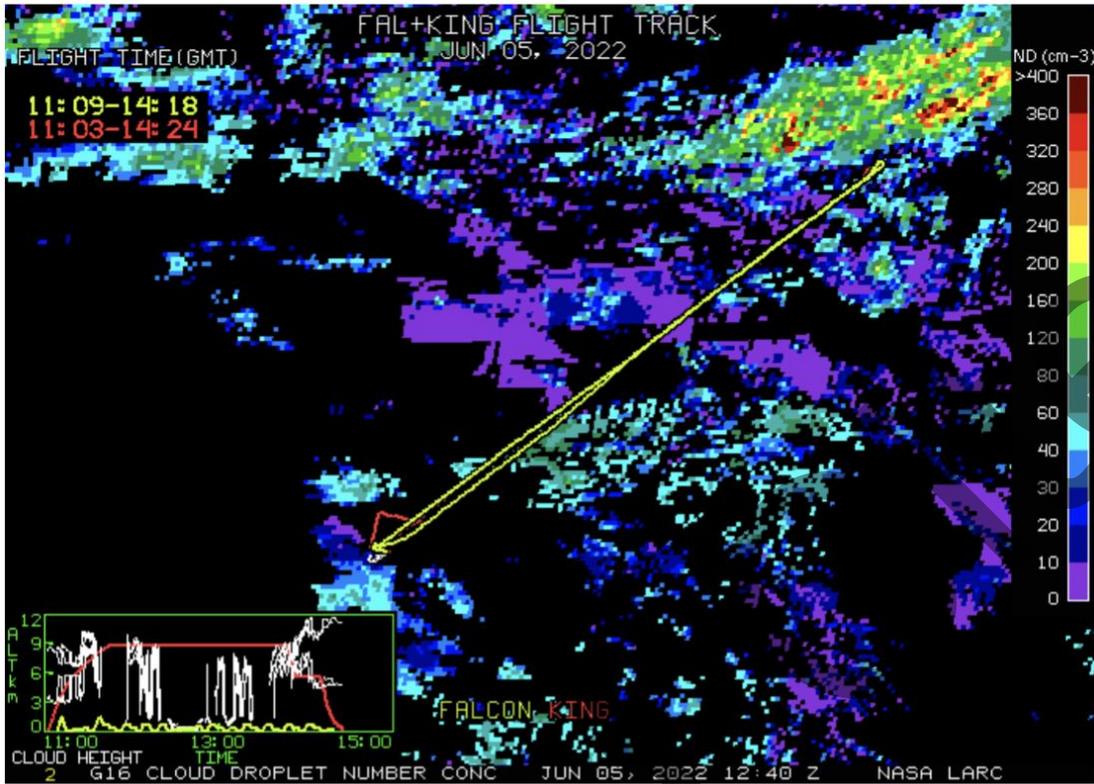
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

